



DEPARTMENT OF THE AIR FORCE
59TH MEDICAL WING (AETC)
JOINT BASE SAN ANTONIO - LACKLAND TEXAS

26 APR 2016

MEMORANDUM FOR SGP

ATTN: COL JIANZHONG ZHANG

FROM: 59 MDW/SGVU

SUBJECT: Professional Presentation Approval

1. Your paper, entitled **Transcranial Magnetic Stimulation in Treatment of Active Duty Members with PTSD, Depression, and Lower Back Pain** presented at/published to **Aerospace Medicine and Human Performance Vol. 86, No. 3 March 2015** with MDWI 41-108, and has been assigned local file #**16172**.
2. Pertinent biographic information (name of author(s), title, etc.) has been entered into our computer file. Please advise us (by phone or mail) that your presentation was given. At that time, we will need the date (month, day and year) along with the location of your presentation. It is important to update this information so that we can provide quality support for you, your department, and the Medical Center commander. This information is used to document the scholarly activities of our professional staff and students, which is an essential component of Wilford Hall Ambulatory Surgical Center (WHASC) internship and residency programs.
3. Please know that if you are a Graduate Health Sciences Education student and your department has told you they cannot fund your publication, the 59th Clinical Research Division may pay for your basic journal publishing charges (to include costs for tables and black and white photos). We cannot pay for reprints. If you are 59 MDW staff member, we can forward your request for funds to the designated wing POC.
4. Congratulations, and thank you for your efforts and time. Your contributions are vital to the medical mission. We look forward to assisting you in your future publication/presentation efforts.

Linda Steel-Goodwin

LINDA STEEL-GOODWIN, Col, USAF, BSC
Director, Clinical Investigations & Research Support



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

19 April 2016

MEMORANDUM FOR MDW/SGVU
ATTN: Col Jianzhong Zhang

FROM: 502 ISG/JA (1Lt Heather Slawson)

SUBJECT: Ethics Review for Publication Abstract Approval Request


1. **BLUF:** A request for a legal review of an abstract titled "Transcranial Magnetic Stimulation in Treatment of Active Duty Members with PTSD, Depression, and Lower Back Pain" was submitted by Col Jianzhong Zhang. Col Zhang published this abstract in the Journal of Aerospace Medicine and Human Performance, Vol 86, No. 3 in March 2015. The abstract did not include the required disclaimer, and a legal review was not conducted before the publication of the abstract. It is uncertain whether a Public Affairs review was conducted before the publication. There do not appear to be any conflicts of interest issues with the abstract.

2. **FACTS:** An abstract titled "Transcranial Magnetic Stimulation in Treatment of Active Duty Members with PTSD, Depression, and Lower Back Pain" was published in 2015. Col Zhang has requested retroactive approval of the publication of the abstract. The abstract did not include the required disclaimer.

3. **LAWS AND REGULATIONS:** DoD 5500.07-R, Joint Ethics Regulation (JER), section 3-305 lays out rules governing "Teaching, Speaking and Writing." If the presentation will "deal in significant part with any ongoing or announced policy, program or operation" of the Air Force, the presenter is required to include a disclaimer that states the "views presented are those of the speaker or author and do not necessarily represent the views of DoD or its Components."

4. **ANALYSIS:** This abstract "deals in significant part with an ongoing or announced policy, program or operation" of the Air Force. Col Zhang's rank was included in the abstract. Additionally, the research and information discussed in the abstract was obtained as part of his military medical practice. Col Zhang did not include the required disclaimer on the abstract. There are no apparent conflicts of interest that would have prohibited the publication of this abstract.

5. CONCLUSION: The abstract presented for review did not include the disclaimer required by the JER. For all future publications, a legal review must be obtained before publication and a disclaimer must be included. The disclaimer must state, "the views presented are those of the authors and do not necessarily represent the views of DoD or its Components." If you have any questions, please call Lt Heather Slawson at 671-5728.


HEATHER M. SLAWSON, 1Lt, USAF
Assistant Staff Judge Advocate

I concur.


ARLENE CHRISTILLES
Chief, Civil Law

PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS			
TO: Clinical Research Division/SGVU (59 MDW/SGVU)		FROM: Author's Name, Rank, Grade, Office Symbol Jianzhong Zhang, Col, O6, SGP	
		PROTOCOL NUMBER: FWH20150038H	
PROTOCOL TITLE - [NOTE: For each new release of medical research or technical information as a publication/presentation, a new 59 MDW Form 3039 must be submitted for review and approval.] A PILOT STUDY TO EVALUATE THE EFFICACY OF EEG/ECG-GUIDED MAGNETIC RESONANT THERAPY (MRT) IN WAR VETERANS WITH POSTTRAUMATIC STRESS DISORDER (PTSD) AT TINKER AFB			
1. TITLE OF MATERIAL TO BE PUBLISHED OR PRESENTED TRANSCRANIAL MAGNETIC STIMULATION IN TREATMENT OF ACTIVE DUTY MEMBERS WITH PTSD, DEPRESSION AND LOWER BACK PAIN			
2. FUNDING RECEIVED FOR THIS STUDY? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO FUNDING SOURCE:			
3. IS THIS MATERIAL CLASSIFIED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
4. IS THIS MATERIAL SUBJECT TO ANY LEGAL RESTRICTIONS FOR PUBLICATION OR PRESENTATION THROUGH A COLLABORATIVE RESEARCH AND DEVELOPMENT AGREEMENT (CRADA), MATERIAL TRANSFER AGREEMENT (MTA), INTELLECTUAL PROPERTY RIGHTS AGREEMENT ETC.? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <small>NOTE: If the answer is "YES" then attach a copy to the Agreement to the Publications/Presentations Request Form.</small>			
5. MATERIAL IS FOR (Check appropriate box or boxes for approval with this request.) <input checked="" type="checkbox"/> DOMESTIC RELEASE <input type="checkbox"/> FOREIGN RELEASE <small>(ATTACH COPY OF MATERIAL TO BE PUBLISHED/PRESENTED)</small>			
<input type="checkbox"/>	PUBLICATION/JOURNAL (List intended publication/journal)		
<input checked="" type="checkbox"/>	PUBLICATION ABSTRACT (List intended journal.) AEROSPACE MEDICINE AND HUMAN PERFORMANCE Vol. 86, No. 3 March 2015		
<input type="checkbox"/>	POSTER (To be demonstrated at meeting/Name of Meeting, City, State, and Date of Meeting)		
<input type="checkbox"/>	PLATFORM PRESENTATION (At civilian institutions/Name of Meeting, State, Date of Meeting)		
<input type="checkbox"/>	OTHER (Describe: Name of Meeting, City, State, and Date of Meeting)		
6. WHAT IS THE EXPECTED DATE YOUR PRESENTATION/PUBLICATION WILL BE SUBMITTED TO THE DEFENSE TECHNICAL INFORMATION CENTER (DTIC)?			
POINT OF CONTACT			
7. WHO IS THE PRIMARY 59 MDW POINT OF CONTACT? (Last, First, MI.) (Include email)			DUTY PHONE/PAGER No.
AUTHORSHIP AND CO-AUTHOR(S) (List in the order they will appear in the manuscript)			
LAST NAME, FIRST NAME AND MI.	GRADE/RANK	SQUADRON/GROUP/OFFICE SYM	INSTITUTION (If not 59 MDW)
a. Primary/corresponding author Jianzhong Zhang	06/Col	72d MDG/SGP	Tinker AFB
b. Jin Yi	NA	NA	Brain Treatment Center, CA
c. Gail Bates	04/Capt	72d MDG/Mental Health	Tinker AFB
d.			
e.			
f.			
g.			
I CERTIFY ANY HUMAN OR ANIMAL RESEARCH RELATED STUDIES WERE APPROVED AND PERFORMED IN STRICT ACCORDANCE WITH 32 CFR 219, AFMAN 40-401_IP AND 59 MDWI 41-108. I HAVE READ THE FINAL VERSION OF THE ATTACHED MATERIAL AND CERTIFY THAT IT IS AN ACCURATE MANUSCRIPT FOR PUBLICATION AND/OR PRESENTATION.			
AUTHOR'S PRINTED NAME/RANK/GRADE Jianzhong Zhang/Col/O6		AUTHOR'S SIGNATURE ZHANG.JIANZHONG.J.124032447 <small>Digitally signed by ZHANG.JIANZHONG.J.124032447 DN: cn=J. Zhang, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF, email=ZHANG.JIANZHONG.J.124032447@us.af.mil Date: 2016.04.13 16:36:01 -05'00'</small>	DATE 13 April 2016
APPROVING AUTHORITY'S PRINTED NAME, RANK, TITLE		APPROVING AUTHORITY'S SIGNATURE	DATE

PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS

1st INDORSEMENT (SGVU Use Only)

TO: Clinical Research Division
(59 MDW/SGVU)
(Contact 292-7141 for email instructions)

1. DATE RECEIVED
Apr 15, 2016

2. ASSIGNED PROCESSING REQUEST FILE NUMBER
16172

3. DATE REVIEWED
15 Apr 2016

4. DATE FORWARDED TO PA

5. AUTHOR CONTACTED FOR RECOMMENDED OR NECESSARY CHANGES

☐ NO ☐ YES If yes give date:

☒ N/A

6. COMMENTS

☒ APPROVED ☐ DISAPPROVED

Request is to approve an abstract that was published prior in 2015

PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER
COL LINDA STEEL-GOODWIN. USAF, BSC

DATE
Apr 15, 2016

SIGNATURE OF REVIEWER
STEEL
GOODWIN.LINDA.1186463583

Digitally signed by STEEL GOODWIN.LINDA.1186463583
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF, cn=STEEL
GOODWIN.LINDA.1186463583
Date: 2016.04.15 11:31:33 -0500

2nd INDORSEMENT (PA Use Only)

TO: 59 MDW OFFICE OF PUBLIC AFFAIRS
(PA)

1. DATE RECEIVED
Apr 21, 2016

2. DATE FORWARDED TO 59 MDW/SGVU
Apr 26, 2016

6. COMMENTS ☒ APPROVED (In compliance with security and policy review directives.) ☐ DISAPPROVED

PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER
Christopher Carwile, TSgt/E-6, NCOIC, PA

DATE
Apr 26, 2016

SIGNATURE OF REVIEWER
CARWILE.CHRISTOPHER.S
TEWART.1280477229

Digitally signed by CARWILE.CHRISTOPHER.S
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF,
cn=CARWILE.CHRISTOPHER.S
Date: 2016.04.26 14:34:31 -0500

3rd INDORSEMENT (SGVU Use Only)

TO: 59 MDW/SGVU

1. DATE RECEIVED

2. SENIOR AUTHOR NOTIFIED BY PHONE OF APPROVAL OR DISAPPROVAL: ☐ YES ☐ NO ☐ Could not be reached ☐ Left message

3. DATE WRITTEN NOTICE OF APPROVAL AND CLEARANCE MAILED TO AUTHOR:

4. COMMENTS ☐ APPROVED ☐ DISAPPROVED

PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER

SIGNATURE OF REVIEWER

DATE

for 30 days in Antarctica. The objective was to observe the physiological adaptation of the explorers in this extreme environment following physical preparation, high calorie input nutrition, and mineral supplements. Anthropometric measures (DXA), a specific aerobic test, grip strength and endurance tests (suspension bar) were conducted before and after the expedition in the laboratory at UQAM. An analysis by paired samples t-test was used to compare pre- and post expedition. **RESULTS:** Pre- VS post- expedition measurements were significantly [L1] different for %body fat (17.1 ± 7.9 VS 15.0 ± 10.5 and 25.7 ± 6.7 VS 24.6 ± 6.3 % fat for men and women, respectively; $t=3.9$), but not for lean mass (62.9 ± 4.8 VS 63.3 ± 4.6 and 45.4 ± 4.4 VS 53.3 ± 4.1 kg; $t=-0.3$ for men and women, respectively). Pre-post expedition were significantly different for the specific $\dot{V}O_{2peak}$ test (40 ± 3 VS 51 ± 9 ml/kg/min for men and 38 ± 2 VS 42 ± 4 ml/kg/min; $t=-2.89$ for women). The grip strength and suspension bar test did not change significantly and for the grip strength was 126 ± 8 VS 115 ± 14 kg for men and 78 ± 12 VS 75 ± 17 kg for women; $t=0.8$, while for the suspension bar test was 73 ± 10 VS 61 ± 20 seconds for men and 37 ± 17 VS 55 ± 47 seconds for women; $t=-0.8$, before and after the expedition, respectively. **DISCUSSION:** The nutrition and the physical preparation appear to be key aspects during an expedition in an extreme environment to countermeasure weight lost and physical ability decay.

Learning Objectives:

1. Identify different physiologic changes during an expedition in Antarctica.

4:00 p.m.

[491] AEROMEDICAL DECISION MAKING IN SPONDYLOARTHROPATHY

C. Chua

Republic of Singapore Air Force Medical Service, Singapore, Singapore

INTRODUCTION: Spondyloarthropathy refers to a family of rheumatic diseases that cause arthritis by involving the entheses. The onset of disease typically begins in teens and 20s, with a male preponderance. Besides affecting the joints, it is often associated with other conditions such as inflammatory bowel disease, psoriasis and uveitis. Medical treatment of spondyloarthropathy and associated conditions may involve disease modifying anti-rheumatic drugs (DMARDs) and TNF alpha blockers. The aeromedical disposition of military aviators who are stricken with this condition is dependent on the extensiveness of disease, presence of associated conditions, clinical assessment on physical impairment, and effects of pharmacological treatment. In this presentation, the aeromedical risk assessment and disposition of spondyloarthropathy cases will be discussed through the review of the management of two aircrew with peripheral spondyloarthritis.

Learning Objectives:

1. To provide an overview on spondyloarthropathy and its predominant treatment modalities.
2. To discuss the aeromedical risk assessment and disposition of spondyloarthropathy.

4:15 p.m.

[492] TRANSCRANIAL MAGNETIC STIMULATION IN TREATMENT OF ACTIVE DUTY MEMBERS WITH PTSD, DEPRESSION AND LOWER BACK PAIN

J. Zhang¹, Y. Jin², and G. Bates³

¹Aerospace Medicine, Tinker Air Force Base, Oklahoma City, OK;

²Brain Treatment Center, Newport Beach, CA; ³Mental Health, Tinker Air Force Base, Oklahoma City, OK

INTRODUCTION: Transcranial Magnetic Stimulation (TMS) has been recently FDA approved to treat patients with depression and migraine. Data from Air Force Research Library shows that a warrior's cognitive abilities can be enhanced through repetitive TMS. It is indicated that

members with PTSD may receive benefit from rTMS treatment. We treated airmen and families in Los Angeles area with rTMS that significantly improved outcomes in the following cases. 1) A 50 year old active duty male complained of chronic back pain and a moderate degree of anxiety from work-related stressors. After 30 TMS treatments, his back pain is now primarily gone. More importantly, he is far less anxious, sleeping better and can focus "in the now" better than he ever has. 2) A 17 year old female suffered from depression for two years with significant negative impact on her school performance. After 20 TMS treatments, her symptoms improved significantly. She has mood, sleep and energy improvement. As a result, her psychiatrist started tapering her antidepressant medications. 3) An active duty male Master Sergeant with 21 years of service suffered from PTSD following 6 deployments to Iraq/Afghanistan as an EOD technician between 2000 and 2011. After trying multiple other treatments with varied results, he agreed to give TMS a try. With only a week of treatment, his sleep quality improved. His anger subsided significantly and he started to enjoy things again. He has a significant reduction of his PCL-M score from baseline of 62 to 17 after one week of treatment. Importantly, he has become able to focus again and can concentrate on information much more efficiently. We are currently planning a pilot study to gather more information on the efficacy of TMS in PTSD, Depression, and LBP in our active duty population. Baseline EEG will be done on all subjects prior to undergoing two weeks of TMS treatment (30 min a session; 5 sessions/week). PCL-M scales will be used to monitor progress of members with PTSD, and PHQ-9 be used for members with depression. For back pain, the pain scale and number of days on profile will be used to monitor progress. The ultimate goal is to improve members' duty performance and therefore increase mission readiness.

Learning Objectives:

1. TMS through synchronization of brain wave (activity) may improve symptoms in people with PTSD, Depression, and LBP.

4:30 p.m.

[493] REASONS FOR MEDICAL DISQUALIFICATION OF IRANIAN COMMERCIAL PILOTS BETWEEN 2001-2013

K. soleimani

Air Medical Section, Civil Aviation Organization, Tehran, Iran

INTRODUCTION: A License holder is legally obliged to undergo regular health examination, performed by designated medical examiner in an aero medical center (AMC). The medical requirements for commercial pilots are issued by the ICAO, FAA, CAA, and JAA. In Iran the Aeromedical Section (AMS) of the Civil Aviation Authority evaluates and assesses medical reports submitted to the Licensing Authority by medical examiners whether pilots are medically fit to fly. This study presents the causes for medical disqualification among the Iranian commercial pilot population during a 13-yr period. **METHODS:** The categories of medical condition which have most often been responsible for permanent disqualification of flying personnel have been previously documented in some studies. In my country, the outcomes of all pilot medical examinations are gathered in the archive of the Aeromedical Section of the Iranian Civil Aviation Authority. The disqualifying conditions were reviewed, listed individually, and grouped by major disease categories and age factors related to these conditions were examined. **RESULTS:** In this study total population are 41480 pilots took the Iranian pilot's medical examination and pilot-years, and 164 pilots were permanently grounded, which gives a 13-yr average disqualification rate of 4.2 per 1,000 pilot-years. **DISCUSSION:** Cardiovascular disease, as a calcification, was found to be the commonest cause of disqualification in this population. Other causes, such as internal medical, neurological diseases, ENT problems, Endocrine disease, and psychiatric diseases, are frequently reasons for permanent disqualification. This fact is probably not attributed to more stringent health requirements, but possibly to the attitudes of the pilots, who have become more critical with respect to their subjective perception of their working environment and psychosocial factors.

Learning Objectives:

1. This study presents the causes for medical disqualification among the Iranian commercial pilot population during a 13-yr period.